

## GENERIC LEVEL FOUR TECHNOLOGY DICTIONARY

### Phase 4: *Capital Construction*

- 4.xx.xx.01      Technology Transportation and Setup** – This element includes transportation or delivery and setup of equipment necessary to construct and install a treatment technology. This element is sometimes called “Freight on Board.”
- 4.xx.xx.02      Equipment and Components** – This element includes process equipment and components; the initial construction or installation of remediation or treatment technology components and materials; the initial cost of technology parts and supplies, and other treatment costs inherent to that technology. For example, the cost of off-gas treatment and components in an in-situ vitrification process.
- 4.xx.xx.03      Start-up and Testing** – This element includes activities associated with the start-up and testing of the treatment technology such as testing to demonstrate compliance, establishment of operating and maintenance parameters, staffing and establishment of organization, review of facility design, shakedown and training of O&M personnel. Startup and testing is considered complete when technology operations can be sustained within specified operational and quality standards.
- 4.xx.xx.9x      Other** - This element is provided to allow the user to include an element for items or activities that are not addressed elsewhere.

### Phase 5: *Operations and Maintenance*

- 5.xx.xx.01      Performance Testing and Analysis** – Includes the monitoring, sampling, testing, and analyzing of costs to demonstrate the technology is performing as designed.
- 5.xx.xx.02      Operations** – Includes personnel and equipment necessary to operate the treatment technology.
- 5.xx.xx.03      Consumables** – Includes the materials and supplies used in operations of the treatment technology.
- 5.xx.xx.04      Utilities** – Includes the energy costs for operating the treatment technology.
- 5.xx.xx.05      Maintenance** – Includes the labor and materials necessary to perform preventive, corrective, and predictive maintenance.
- 5.xx.xx.9x      Other** – This element is provided to allow the user to include an element for items or activities that are not addressed elsewhere.

The operation and maintenance costs can be estimated, collected, and reported in an individual technology (ECES level two elements X.21-X.30 and X.34) if the user collects cost by the individual technology. The costs can also be collected under the facility (ECES elements X.11-X.13) if several technologies are operating in one facility and the user collects the costs for operating the facility, including the technologies, as one unit.

For environmental technologies, individual agencies, programs, or organizations can use a more detailed set of level four elements, as long as the elements can be summarized to the FRTR level four elements.

The definitions for Levels 4 and 5 elements have been drafted and are available on the ACE Team home page at <http://www.em.doe.gov/cost/eces.html>. These definitions are in the process

of being reviewed and revised. They will be included in the next ECES annual update after review and update of the document.